WHAT IS CLAIMED IS:

1	1.	An isolated nucleic acid encoding an ABCG8 polypeptide, said
2	polypeptide compris	ing an amino acid sequence that is at least about 70% identical to an
3	amino acid sequence	as set forth in SEQ ID NO:4 or 8.
1	2.	The nucleic acid of claim 1, wherein said polypeptide specifically
2	binds to polyclonal a	ntibodies generated against a polypeptide that comprises an amino
3	acid sequence selecte	ed from the group consisting of SEQ ID NO:4 and SEQ ID NO:8.
1	3.	The nucleic acid of claim 1, wherein said polypeptide comprises an
2	amino acid sequence	selected from the group consisting of SEQ ID NO:4 and SEQ ID
3	NO:8.	
1	4.	The nucleic acid of claim 1, wherein said polypeptide forms a
2	dimer with a second	ABC polypeptide, and wherein said dimer exhibits sterol transport
3	activity.	
1	5.	The nucleic acid of claim 4, wherein said dimer is a heterodimer.
1	6.	The nucleic acid of claim 4, wherein said sterol is cholesterol.
1	7.	The nucleic acid of claim 5, wherein said second ABC polypeptide
2	is an ABCG5 polype	eptide.
1	8.	The nucleic acid of claim 7, wherein said ABCG5 polypeptide
2	comprises an amino	acid sequence that is at least about 70% identical to an amino acid
3	sequence as set forth	in SEQ ID NO:2 or 6.
1	9.	The nucleic acid of claim 7, wherein said ABCG5 polypeptide
2	selectively binds to p	polyclonal antibodies generated against a polypeptide comprising an
3	amino acid sequence	as set forth in SEQ ID NO:2 or 6.
1	10.	The nucleic acid of claim 7, wherein said ABCG5 polypeptide
2	comprises an amino	acid sequence selected from the group consisting of SEQ ID NO:2
3	and SEQ ID NO:6.	

1	11. The nucleic acid of claim 7, wherein said ABCG5 polypeptide is	}
2	encoded by a nucleic acid that hybridizes under moderately stringent conditions to a	
3	nucleic acid comprising a nucleotide sequence as set forth in SEQ ID NO:1 or 5.	
1	12. The nucleic acid of claim 7, wherein said ABCG5 polypeptide is	3
2	encoded by a nucleic acid that comprises a nucleotide sequence that is at least about 70	%
3	identical to a sequence as set forth in SEQ ID NO:1 or 5.	
1	13. The nucleic acid of claim 1, wherein said nucleic acid hybridizes	3
2	under moderately stringent hybridization conditions to a nucleic acid comprising a	
3	nucleotide sequence as set forth in SEQ ID NO:3 or 7.	
1	14. The nucleic acid of claim 13, wherein said nucleic acid hybridize	es
2	under stringent hybridization conditions to a nucleic acid comprising a nucleotide	
3	sequence as set forth in SEQ ID NO:3 or 7.	
1	15. The nucleic acid of claim 1, wherein said nucleic acid comprises	a
2	nucleotide sequence at least about 70% identical to a sequence as set forth in SEQ ID	
3	NO:3 or 7.	
1	16. The nucleic acid of claim 1, wherein said nucleic acid comprises	s a
2	nucleotide sequence as set forth in SEQ ID NO:3 or 7.	
1	17. The nucleic acid of claim 1, wherein said nucleic acid is from a	
2	mouse or a human.	
1	18. The nucleic acid of claim 1, wherein said nucleic acid is express	ed
2	in the intestine or in the liver in the presence of an LXR agonist.	
1	19. The nucleic acid of claim 1, wherein said nucleic acid is express	ed
2	in a tissue selected from the group consisting of liver, jejunum, ileum, and duodenum.	
1	20. An expression cassette comprising the nucleic acid of claim 1	
2	operably linked to a promoter.	

21.

An isolated cell comprising the expression cassette of claim 20.

cholesterol.

1		22.	An isolated ABCG8 polypeptide, said polypeptide comprising an
2	amino acid sec	quence	that is at least about 70% identical to an amino acid sequence as set
3	forth in SEQ I	D NO:4	4 or 8.
1		23.	The isolated polypeptide of claim 22, wherein said polypeptide
2			olyclonal antibodies generated against a polypeptide comprising an
3	amino acid sec	quence	as set forth in SEQ ID NO:4 or 8.
1		24.	The isolated polypeptide of claim 22, wherein said polypeptide
2	comprises an a	amino a	acid sequence as set forth in SEQ ID NO:4 or 8.
1		25.	The isolated polypeptide of claim 22, wherein said polypeptide
2	forms a dimer		second ABC polypeptide, and wherein said dimer exhibits sterol
			second ADC polypopulae, and wherein said anner chimetes seems
3	transport activ	ity.	
1		26.	The isolated polypeptide of claim 25, wherein said dimer is a
2	heterodimer.		
1		27.	The isolated polypeptide of claim 26, wherein said second ABC
2	polypeptide is	ABCC	3 5.
1		28.	The isolated polypeptide of claim 27, wherein said ABCG5
2	nolynentide co		es an amino acid sequence that is at least about 70% identical to an
3			as set forth in SEQ ID NO:2 or 6.
J	annio acid se	quence	
1		29.	The isolated polypeptide of claim 27, wherein said ABCG5
2	polypeptide se	elective	ely binds to polyclonal antibodies generated against a polypeptide
3	comprising ar	amino	acid sequence as set forth in SEQ ID NO:2 or 6.
1		30 .	The isolated polypeptide of claim 27, wherein said ABCG5
2	polypentide co		es an amino acid sequence selected from the group consisting of
3	SEQ ID NO:2		
5	3EQ ID 110.2		-

31.

The isolated polypeptide of claim 25, wherein said sterol is

1	32. The isolated polypeptide of claim 22, wherein said polypeptide is	
2	expressed in the intestine or in the liver in the presence of an LXR agonist.	
1	33. The isolated polypeptide of claim 22, wherein said polypeptide is	
2	expressed in a tissue selected from the group consisting of the liver, jejunum, ileum, and	
3	duodenum.	
1	34. The isolated polypeptide of claim 22, wherein said polypeptide is	
2	from a mouse or a human.	
1	35. An antibody generated against the isolated polypeptide of claim 22.	
1	36. A method of making an ABCG8 polypeptide, the method	
2	comprising:	
3	(i) introducing a nucleic acid of claim 1 into a host cell or cellular extract;	
4	and	
5	(ii) incubating said host cell or cellular extract under conditions such that	
6	said ABCG8 polypeptide is expressed in the host cell or cellular extract.	
1	37. The method of claim 36, further comprising recovering the ABCG8	
2	polypeptide from the host cell or cellular extract.	
1	38. A method of identifying a compound useful in the treatment or	
1		
2	prevention of a sterol-related disorder, said method comprising contacting an ABCG8 polypeptide with a test agent, and determining the functional effect of said test agent upon	
3		
4	said polypeptide, wherein a functional effect exerted on said polypeptide by said test	
5	agent indicates that said test agent is a compound useful in the treatment or prevention of	
6	said sterol-related disorder.	
1	39. The method of claim 38, wherein said sterol is cholesterol.	
1	40. The method of claim 38, wherein said polypeptide comprises an	
2	amino acid sequence that is at least about 70% identical to an amino acid sequence as set	
3	forth in SEQ ID NO:4 or 8.	
1	41. The method of claim 38, wherein said polypeptide is present in a	
2	cell or cell membrane.	

1	42. The method of claim 38, wherein said polypeptide is bound to a
2	heterologous ABC polypeptide, forming a heterodimer.
	to the state of th
1	43. The method of claim 38, wherein said functional effect comprises
2	an increase in the sterol transport activity of said polypeptide.
1	44. The method of claim 38, wherein said functional effect comprises a
2	physical interaction between said test agent and said polypeptide.
	physical micraetics convers that the figure is a property of the physical micraetics and the physical microetics a
1	45. The method of claim 44, wherein said physical interaction is
2	detected using a direct binding assay.
	Ac The Alexander St. 1. Calaine 29 wherein said storal related disorder is
1	46. The method of claim 38, wherein said sterol-related disorder is
2	sitosterolemia.
1	47. The method of claim 38, wherein said sterol-related disorder is
2	selected from the group consisting of hypercholesterolemia, hyperlipidemia, gall stones,
3	HDL deficiency, atherosclerosis, and nutritional deficiencies.
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1	48. A method of identifying a compound useful in the treatment or
2	prevention of a sterol-related disorder, said method comprising contacting a cell that
3	expresses or is capable of expressing an ABCG8 polypeptide with a test agent, and
4	determining the functional effect of said test agent upon said cell;
5	wherein a functional effect exerted on said cell by said test agent indicates
6	that said test agent is a compound useful in the treatment or prevention of said sterol-
7	related disorder.
1	49. The method of claim 48, wherein said sterol is cholesterol.
1	50. The method of claim 48, wherein said ABCG8 polypeptide
2	comprises an amino acid sequence that is at least about 70% identical to an amino acid
3	sequence as set forth in SEQ ID NO:4 or 8.
,	sequence as set form in sequences.
1	51. The method of claim 48, wherein said compound produces an
2	increase in the expression of an ABCG8 gene that encodes said ABCG8 polypeptide.

1		52.	The method of claim 51, wherein said increase in the expression of
2	said ABCG8 g	ene is d	letected by detecting the level of ABCG8 mRNA in said cell.
1		53.	The method of claim 51, wherein said increase in the expression of
2	said ABCG8 g	ene is d	letected by detecting the level of ABCG8 polypeptide in said cell.
1		54.	The method of claim 51, wherein said increase in the expression of
2	said ABCG8 g	ene is d	letected by detecting the level of ABCG8 protein activity in said
3	cell.		
1		55.	The method of claim 48, wherein said compound modulates the
2	level of sterol t	ranspo	rt activity in said cell.
1		56.	The method of claim 55, wherein said sterol transport activity in
2	said cell is dete	ected by	detecting the rate of sterol efflux in said cell.
1		57.	The method of claim 56, wherein said sterol is cholesterol.
1 .		58.	The method of claim 51, wherein said increase in the expression of
2	said ABCG8 ge	ene is n	nediated by LXR or RXR.
1		59.	The method of claim 48, wherein said sterol-related disorder is
2	sitosterolemia.		
1		60.	The method of claim 48, wherein said sterol-related disorder is
2			up consisting of hypercholesterolemia, hyperlipidemia, gall stones,
3		•	rosclerosis, and nutritional deficiencies.
3	TIDE deficienc	y, amei	tosciciosis, and nutritional deficiences.
1		61.	A method of treating or preventing a sterol-related disorder in a
2	mammal, said	method	comprising administering to said mammal a compound that
3	increases the le	vel of	expression or activity of an ABCG8 polypeptide in a plurality of
4	cells of said ma	ammal.	
1		62.	The method of claim 61, wherein said sterol is cholesterol.
1		63.	The method of claim 61, wherein said sterol-related disorder is
2	sitosterolemia.		

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mammal is detected.

1	64. The method of claim 61, wherein said sterol-related disorder is
2	selected from the group consisting of hypercholesterolemia, hyperlipidemia, gall stones,
3	HDL deficiency, atherosclerosis, and nutritional deficiencies.
1	65. The method of claim 61, wherein said compound produces a
2	decrease in the amount of dietary sterol that is absorbed in said mammal.
1	66. The method of claim 61, wherein said compound produces a
2	decrease in the amount of sterol that is retained in the liver of said mammal.
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1	67. The method of claim 61, wherein said compound is identified using
2	the method of claim 38 or 48.
1	68. The method of claim 61, wherein said compound causes an
2	increase in LXR or RXR activity within cells of said mammal.
1	69. A method of prescreening to identify a candidate therapeutic agent
2	that modulates ABCG8 activity in a mammal, the method comprising:
3	providing a cell which comprises an ABCG8 polypeptide; and
4	a test compound; and
5	determining whether the amount of sterol transport activity in said cell is
6	increased or decreased in the presence of the test compound relative to the activity in the
7	absence of the test compound;
8	wherein a test compound that causes an increase or decrease in the amount
	of sterol transport activity is a candidate therapeutic agent for modulation of ABCG8
9	
10	activity in a mammal.
	70. The method of claim 69, further comprising a secondary step, wherein
sai	id test compound is administered to a mammal, and the absorption of dietary sterol in said